

REMARKS

This patent application presently includes Claims 1-24, all of which standard rejected. Claims 1, 6, 7, and 11 are amended to address objections raised by the examiner, and all rejections are respectfully traversed. *No amendments have been made for a statutory purpose related to patentability.*

Claims 1, 6, 7, 10 and 11 were objected to on the 37 CFR 1.7 5(a), with specific grounds being set forth in the office action. These rejections have been addressed by amendment, as set forth specifically below.

The examiner noted that "said data processing device" at lines 3 and 6 of Claim 1 had no antecedent basis. The Claim has been amended at these two locations to change "device" to "apparatus." There is an antecedent basis for "data processing apparatus" in the first line of Claim 1.

The examiner noted that there was no antecedent basis for the recitation "said individual data processing apparatus" at line 7 of Claim 6. This recitation has now been amended to read "individual ones of said data processing apparatuses", there being an antecedent basis for data processing apparatuses at line 5 of the Claim.

The examiner noted that "path" at line 4 of Claim 7 should be "paths." This amendment has now been made.

The examiner noted that "include" at line 8 of Claim 10 should read "includes." This amendment has now been made.

The examiner noted that "comprise" at line 8 of Claim 11 should read "comprises." This amendment has not been made.

In view of the foregoing amendments, all objections should now be withdrawn.

Claims 1, 8, 12, 13, 20 and 24 were rejected as obvious over MGPUB ("Key Technology for Digital's Content: Memory Stick Copyright Protection Technology-MagicGate"; CX-NEWS, Volume 20, 05/2000) in view of Lin U.S. Patent Application Publication No. 2002/0025046. This rejection is respectfully traversed. Neither MGPUB nor Lin, nor the combination thereof renders these Claims obvious.

In making this rejection, the examiner state that MGPUB discloses an apparatus (memory stick Walkman) for executing reproduction of data from a memory device (memory stick) or for recording data into a memory device. He noted that the data processing apparatus has a structure for executing reproduction of data from the memory device or recording of data into the memory device on the condition that a mutual authentication between the data processing apparatus and a memory device is established. However, he admitted that in MGPUB does not disclose the use of a virtual memory device. He asserts that Lin discloses authentication between a proxy emulating the memory device and a data processing apparatus when the memory device has no function to execute mutual authentication. He therefore concluded that the combination of MGPUB and Lin would render the present Claims obvious. Nothing could be further from the truth.

MGPUB discloses nothing more than a conventional system providing an interface between a processing apparatus and a memory device when mutual authentication between the two is available. The examiner admitted as much. Lin, on the other hand, discloses nothing about the interoperation of a processing apparatus and a memory device. Instead, it relates to users communicating over a network. Each end-user accesses the network through a server. In order to take the burden of security and identification away from the user's computer, the server (or some service provider) acts as a proxy for all security and identification functions.

First of all, it should be noted that the processing apparatus and the memory device of, for example, Claim 11 are in a different functional relationship than the end user station and proxy of Lin. In accordance with the Claim, the processing apparatus interacts with the memory device and mutual authentication is necessary between them. The processing apparatus provides the proxy for the memory device and is, in fact, doing the entire authentication process. In Lin, it is the end user stations that need to perform the authentication. A station has a server in its communication link to the network and the server provides a security interface for its end user stations with respect to the rest of the world.

Lin does not provide the slightest teaching or suggestion that a processor which needs to perform mutual authentication with a memory device could provide a proxy for a memory device that is incapable of performing the authentication. Those skilled in the art would not

find the slightest suggestion for this feature in Lin, nor that it could be of any benefit. Accordingly, the Claims distinguish patentably over MGPUB, Lin, and their combination.

Turning now to the Claims, Claim 1 will be treated as exemplary, Claims 8, 12, 13, 20 and 24 having comparable features. The *data processing apparatus* has a structure for executing mutual authentication with the virtual memory device within it when the memory device cannot function to execute processing of mutual authentication. Furthermore, there is a structure which writes to or reads from the memory device when mutual authentication between the data processing apparatus and the virtual memory device is established. As explained above, this feature is not taught or suggested by MGPUB, Lin, or their combination. Accordingly, Claims 1, 8, 12, 13, 20 and 24 are allowable over that combination.

Claims 2, 9, 14 and 21 were rejected as obvious over them GP you be in view of Lin and further in view of Utsumi U.S. Patent No. 6,501,163. This rejection is respectfully traversed. None of these references, nor any combination thereof, renders the present Claims obvious.

Utsumi discloses nothing about the basic proxy feature of a processing apparatus disclosed above. Accordingly, combining Utsumi with MGPUB and Lin would still not render any of Claims 1, 8, 12, 13, 20 or 24 unpatentable. Claims 9, 14 and 21 are dependent from one of the foregoing Claims and are allowable based upon their dependence from an allowable Claim.

Claims 3, 5, 10, 15, 17 and 22 rejected as obvious over the improbable combination of MGPUP, Lin, Dondeti. et al. U. S. Patent No. 6,24,188 and Caronni U.S. Patent No. 6,195,751. This rejection is respectfully traversed. None of these references, nor any combination thereof, renders the present Claims obvious.

Dondeti and Caronni disclose nothing about the basic proxy feature of a processing apparatus disclosed above. Accordingly, combining Dondeti and Caronni with MGPUB and Lin would still not render any of Claims 1, 8, 12, 13, 20 or 24 unpatentable. Claims 3, 5, 10, 15, 17, and 22 are dependent from one of the foregoing Claims and are allowable based upon their dependence from an allowable Claim. These Claims are also believed to be allowable as incorporating the treed key structure discussed further below with respect to Claim 11.

Claims 4, 11 and 16 were rejected as obvious over in the improbable combination of MGPUB, Lin, Dondeti, Caronni, Story et al. U.S. Patent Application Publication No. 2002/0046181 and Traw et al. U.S. Patent No. 5,949,877. It is noted that the examiner has now combined *six* references without any explanation justifying this improbable combination. This rejection is respectfully traversed. None of these references, nor any combination thereof, renders the present Claims obvious.

Story and Traw disclose nothing about the basic proxy feature of a processing apparatus disclosed above. Accordingly, combining Dondeti and Caronni with MGPUB and Lin would still not render any of Claims 1, 8, 12, 13, 20 or 24 unpatentable. Claims 4, 11 and 16 are dependent from one of the foregoing Claims and are allowable based upon their dependence from an allowable Claim.

Claim 11 is representative of an additional feature which renders it patentable. The Claim provides for a set of enciphering keys provided in a hierarchical tree structure corresponding to a grouping of individual devices. The leaves of the tree correspond to the devices and the nodes to various groupings. Each device has a lowest rank key associated and each node has a higher rank key associated with the corresponding grouping. During secure operations, upper-rank keys are enciphered via lower-rank keys. This is disclosed in the application in figures 3 and 4 and the accompanying description at pages 15-17. It is particularly advantageous for securely updating keys. The examiner has cited no prior art teaching or suggesting the organization of encryption keys a hierarchical tree structure related to groupings of devices where lower-rank keys are used to encipher upper-rank keys. Accordingly, Claim 11 is believed to be allowable over all the references of record or any combination thereof.

Claims 6, 7, 18, and 19 were rejected as obvious over MGPUB in view of Lin and Dondeti. As was explained above with respect to Claims 3, 9, 15, 17 and 22, the combination of these three references does not render Claims 1, 8, 12 or 13 unpatentable. These Claims depend from one of those Claims and would therefore be allowable based upon their dependence from an allowable Claim. However, these Claims are further allowable owing to their inclusion of subject matter comparable to allowable Claim 11.

Claims 16 and 23 were rejected as obvious over MG PUB in view of Lin, Dondeti, Caronni, and Story. Above, it was shown with respect to Claim 15 that this combination less Story could not render Claim 15 or unpatentable. Story discloses nothing about the basic virtual memory proxy feature. Accordingly, adding Story would still not render any Claim 13 unpatentable. Claim 16 is dependent from Claim 13 and is allowable based upon its dependence from an allowable. Claim 16 is further allowable owing to its dependence from allowable Claim 15, which incorporates the hierarchical tree key structure and is not rendered unpatentable by any disclosure in Story. Similarly, Claim 23 incorporates the hierarchical tree key structure and is allowable for the same reasons as Claim 15.

As it is believed that all of the rejections set forth in the Official Action have been fully overcome, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he/she telephone applicant's attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

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Respectfully submitted,

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